

REMARKS / AGRUMENTS

Applicant(s) respectfully traverse this rejection for the reasons set out below, and ask the Examiner for reconsideration.

Summary of the Office Action

Claim 18 is allowed;

Claims 26, 57, and 59 stand rejected under 35 U.S.C. 112, second paragraph;

Claims 2-3, 9, 12-13, 26, 29, 38-40, 43-45, 49-51, 54-56, and 58 stand rejected under 35 U.S.C. 102(e); and

Claims 1, 4-6, 11, 14-17, 19, 35, 41-42, 46-48, 52-53, 57, 59-65, and 57-73 stand rejected under 35 U.S.C. 103(a).

Claim amendment

Claims 26, 57 and 59 were amended so as to comply with 35 U.S.C. 112, second paragraph.

Independent claim 38 was amended so as to incorporate the subject matter of the now canceled dependent claim 46.

Claim 60 was amended so as to rectify an informality, as required in the office action.

No new matter is introduced by this amendment.

Response to the 35 U.S.C. 102(e) rejection of claims 3, 9, 12-13, 26, 29, 38-40, 43-45, 49-51, 54-56, and 58

Claims 2-3, 9, 12-13, 26, 29, 38-40, 43-45, 49-51, 54-56, and 58 stand rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Zhang et al. (U.S. patent 6,79,506).

Regarding claim 2, the examiner argues that Zhang teaches a method for generating and transmitting bit rate conversion information, the method comprising: receiving a sequence of media signals, the sequence of media signals to be transmitted over a communication channel; applying at least two bit rate conversion schemes on the sequence of media signals; and analyzing the results of the appliance of the at least two bit rate conversion schemes to provide bit rate conversion information; and transmitting at least a portion of the bit rate conversion information over the communication channel along with the sequence of media signals.

The applicants respectfully disagree. Zhang teaches of a method which includes encoding video data to provide a compressed bitstream including the compressed video data; obtaining bit rate information describing the bit rate of the video data; and transmitting an output compressed bitstream comprising the video data and transmitting the bit rate information (quoted from claim 14, but also elsewhere in Zhang).

That is, the bit rate information of Zhang is provided accompanying the already compressed video data, and describes the contents of the compressed video data, in order to give the receiving system an ahead of time indication about the contents of the compressed video data, so as to enable a more efficient handling of the video data which is compressed in the compressed video data.

The method claimed in claim 2, and parallel methods and apparatuses discussed in the disclosure, relates to transmitting of at least a portion of the bit rate conversion information along with the sequence of media signals, i.e. the uncompressed stream.

As elaborately discussed in the background to the invention, when applying a bit rate compression, the result of the compression is unknown before the compression is carried out, which may require several iterations of compression before reaching a desired result (see, e.g. paragraphs 5 to 7). As further mentioned in the background, in many now accepted architectures for providing of media streams, the iterations of compression are carried separately by many systems on the same media streams.

Therefore, a determining of results of different compression schemes by an origin unit, and providing thereof along with the uncompressed data (or with

compressed data, before further compression), necessitates no further iteration of trial and error by the receiving systems, because the results of one or more compression processes which may be applied to the sequence of media signals (such as resulting bit rate, quality of the outputted sequence, etc.) are already provided to the receiving systems.

Using the terminology of the invention, Zhang may suggest of receiving a sequence of media signals, the sequence of media signals to be transmitted over a communication channel; applying at least two bit rate conversion schemes on the sequence of media signals **to provide compressed sequence of media signals**; and analyzing the **sequence of media signals** to provide **bit rate information**; and transmitting at least a portion of the **bit rate information** over the communication channel along with the **compressed sequence of media signals**.

Even according to embodiments of the invention of Zhang in which the analyzing pertains also to the compressed sequence of media signals, the data to which Zhang's bit rate information is joined in transmission is the compressed sequence of media signals, and not the sequence of media signals itself.

As the distinction between the compressed and non-compressed sequence of media signal is utilized throughout the herein offered argument, it should be noted that the sequence of media signals according to the teaching of the invention may already be compressed according to one or more compression schemes (it is noted that, by way of example, many ways of storing video data incorporate one or more schemes of compression). Therefore, whenever the process of compression, bit rate conversion is referred to in the following argumentation, it pertains to the specific compression which is referred to in the claimed subject matter, even though one or more additional phases of compression or bit rate conversion may be applied to the sequence of media signals before said compression or bit rate conversion referred to in the claimed subject matter, following said process, or both before or after it.

Returning to the argumentation offered above, it is therefore clear that Zhang teaches away from the invention, as the invention regards specifically of analyzing the results of the appliance of the at least two bit rate conversion schemes to provide bit rate conversion information; and transmitting at least a portion of the bit rate conversion information along with the sequence of media signals, and not along with

the results of the compression (a situation in which will applying at least two bit rate conversions will have no apparent advantage).

Therefore, claim 2 should be allowed.

Claims 3-5, and 9, which depend onto claim 2 should also be allowed.

Claims 12 which contain similar limitations, should also be allowed.

Claims 13-15 which depend onto claim 13 should also be allowed.

Regarding claim 26, it should be noted that claim 26 was amended so as to comply with 35 U.S.C. 112, second paragraph, and now reads:

A method for modifying a bit rate of a sequence of media signals such that the bit rate of the sequence of media signals does not exceed an available bandwidth of a communication channel, the method comprising the steps of: (a) receiving, at a headend, the sequence of media signals, bandwidth information and bit rate conversion information; wherein the sequence of media signals comprises at least two media signals, each of the at least two media signals associated with bit rate conversion information; and wherein the media signals and the bit rate conversion information are received over a communication channel from a distribution center; (b) selecting at least one of the at least two media signals to be provided to the channel having the available bandwidth; (c) determining whether to convert the bit rate of the sequence of media signals in view of bandwidth information and the bit rate conversion information; and (d) converting the bit rate of the sequence of media signals in response to the determination and in response to the selection; wherein each of the bit rate converted media signals is representative of at least a portion of a program;

wherein the step of receiving is preceded by a step of multiplexing the at least two media signals; and wherein the step of multiplexing is preceded by a step of generating bit rate conversion information.

The examiner argues that such a method is taught or at least suggested by Zhang. The applicants respectfully disagree. Referring to stage (a) of receiving at the headend, the receiving comprises receiving at the headend of: (i) the sequence of media signals; (ii) bandwidth information; and (iii) bit rate conversion information; as argued above, and as admitted in the office action, the parallel receiving of Zhang comprises receiving of **compressed multiplex bitstream** received from the network device 58, supposedly bandwidth information, and bit rate information (coding statistics information generated by network device 58). Since the method of the applicants clearly claims receiving of the sequence of media signals, and not of a compressed version thereof, Zhang teaches away from the invention.

Therefore, claim 26 should be allowed.

Regarding claim 38, the examiner argues that Zhang teaches an apparatus for generating and transmitting bit rate conversion information from a distribution center to a headend, the apparatus comprising: (a) at least one bit rate converter for receiving a sequence of media signals to be transmitted to the headend over a communication channel, and for applying at least one bit rate conversion scheme on the sequence of media signals to provide a bit rate converted sequence of media signals; and (b) at least one bit rate conversion analyzer, coupled to the at least one bit rate converter, for receiving and analyzing the bit rate converted sequence of media signals and providing bit rate conversion information.

It is noted that the limitation disclosed in the now canceled dependent claim 46, stating that the apparatus of claim 38 is further configured to transmit the bit rate conversion information and the sequence of media signals to multiple receivers, was incorporated into the currently amended independent claim 38.

Following the same line of argument offered above, and again using the terminology of the invention, Zhang may suggest an apparatus for generating and transmitting **bit rate information**, the apparatus comprising: (a) at least one bit rate converter for receiving a sequence of media signals to be transmitted over a communication channel, and for applying at least one bit rate conversion scheme on the sequence of media signals to provide a bit rate converted sequence of media signals; and (b) at least one bit rate conversion analyzer, coupled to the at least one bit rate converter, for receiving and analyzing the bit rate converted sequence of media signals and providing bit rate information; wherein the apparatus is further configured to transmit the bit rate information and the **bit rate converted sequence of media signals** to multiple receivers.

Hence, Zhang teaches away from the invention, as the invention regards specifically of analyzing the results of the appliance of the at least two bit rate conversion schemes to provide bit rate conversion information; and transmitting at least a portion of the bit rate conversion information along with the sequence of media signals, and not along with the bit rate converted sequence of media signals (a situation in which applying at least two bit rate conversions will have no apparent advantage).

Therefore, claim 38 should be allowed.

Claims 39-48, which depend onto claim 38 should also be allowed.

Response to the 35 U.S.C. 103(a) rejection of claims 1, 6, 11, 16-17, 19, 46-48, 57, 59-65, and 57-70

Claims 1, 6, 11, 16, 17, 19, 46-48, 57, 59-65, and 67-70 stand rejected under 35 U.S.C. 103(a), as being allegedly unpatentable in view of Zhang et al. in view of Worthington et al. (USPN 6,937,323 B2).

Regarding claim 1, the examiner argues that Zhang teaches a method for generating and transmitting bit rate conversion information, the method comprising: receiving a sequence of media signals, the sequence of media signals to be transmitted over a communication channel; applying at least two bit rate conversion schemes on the sequence of media signals; and analyzing the results of the appliance of the at least two bit rate conversion schemes to provide bit rate conversion information to be sent to a controller that determines whether to apply bit rate conversion in response to bit rate conversion information; and that while Zhang does not teach that the bit rate conversion information should be sent to multiple controllers, Worthington teaches a distributing system for distributing information from a central source to multiple receivers.

The applicants respectfully disagree, for several reasons. First of all, following the line of argument followed above, Zhang does not teach nor suggest sending bit rate conversion information to one or more controllers that determines whether to apply bit rate conversion in response to the bit rate conversion information, since Zhang teaches of sending the compressed video data, wherein all the information that accompanies the transmission of the sent compressed video data pertains to the video data, and does not inform the receiving controller about the results of a compression (or of a second compression). The controller can not determine in response to the bit rate information of Zhang whether to apply bit rate conversion, or what the results of such conversion may be, because, as aforementioned and as indicated in the background to the invention, this is exactly a problem that the invention counters.

The reference offered by the examiner in Zhang (10:28-32) reads "in some cases, the network device may also convert the bit rate of one or more compressed bitstreams to help the multiplexed bitstream fit within the allowable bandwidth between the network device and one of the target decoders". Zhang teaches that the

conversion of the bit rate of the one or more compressed bitstreams is responsive to the bit rate information, which does not teach of the result of such compression by the network device. It is stressed again that this conversion process which is taught by Zhang is, as indicated in the background to the invention (e.g. paragraphs 5 to 7), a slow process, which typically require multiple iterations until reaching a satisfactory compression result (both in size and in quality), which is a problem the invention of the applicants offer solution for.

Secondly, the applicants maintain that a **prima facie** case of **obviousness** could not be established in this case. The applicants claim that in order to establish a **prima facie** case of **obviousness**, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The applicants further argue that the examiner did not establish a **prima facie** case of **obviousness** to combine Worthington with Zhang. First of all, there is no suggestion nor a motivation to combine the reference teachings. While the invention of Zhang relates to systems and methods for efficiently scheduling and multiplexing multiple compressed bitstreams including video data using bit rate information describing the bit rate of the video data, the invention of Worthington relates to performing diagnostic assays on an optical disk, processing the test data and distributing the test information across a network. Worthington does not teach of systems of providing large volume of media data (such as many television channels etc.), but of transmitting tests results to several computers or system which belong to a computers network of the originating system. Therefore, Worthington and Zhang should not be combined.

It is noted that Worthington merely describes, quoting from the office action, a system for distribution of information (in this case test results) from a central source

to multiple receivers, and as such does not add substantial invention-related information to the disclosure of Zhang.

Additionally, the prior art references, either apart or when combined, does not teach or suggest all the claim limitations, as neither Zhang nor Worthington teach of a method comprising applying at least two bit rate conversion schemes on a sequence of media signals; and analyzing the results of the appliance of the at least two bit rate conversion schemes to provide bit rate conversion information to be sent to a multiple controllers that determine whether to apply bit rate conversion in response to bit rate conversion information.

For all the reasons offered above, claim 1 should be allowed.

Claims 6, which depends onto claim 1, should also be allowed.

Claims 11 and 16, which contain similar limitations, should also be allowed.

Claims 17, and 19, which depend onto claim 11 should also be allowed.

As aforementioned, claims 46-48 depend onto claim 38 which should be allowed, and therefore should also be allowed.

Claims 57 and 59 contains limitations similar to those of claims 46 and 47, and thus should also be allowed.

Regarding claim 60, the examiner argues that bar the limitation that the bit rate conversion information ought to be sent to multiple controllers, Zhang teaches of an apparatus for modifying a bit rate or a sequence of media signals such that the bit rate of the sequence of media signals does not exceed an available bandwidth of a communication channel, the apparatus comprising: (a) a controller, coupled to a bit rate converter, for receiving bit rate conversion information and bandwidth information and for determining whether to convert the bit rate of the sequence of media signals in response to the bandwidth information and the bit rate conversion information; wherein the bit rate conversion information is provided from a central analyzer to multiple controllers; and (b) the bit rate converter, coupled to the controller, for receiving the sequence of media signals, and for converting the bit rate of the sequence of media signals, in response to the determination.

Firstly, the applicants maintain that Zhang and Worthington should not be combined, for the reasons offered above. Additionally, neither Zhang, nor

Worthington, nor a combination thereof, does not teach of a bit rate converter that is adapted to receive the sequence of media signals and to convert the bit rate thereof in response to a determination, wherein the determination is made by a controller in response to the bit rate conversion information and to bandwidth information, because the receiving units of Zhang receive the compressed video data, and not the video data itself, and therefore the bit rate information of Zhang is not utilized for determination of compression of the video data, which is already received in a compressed form, but to multiplexing thereof. Even is the compressed video data of Zhang is further compressed by the receiving unit, this is not done in response to bit rate conversion information which indicates the results of such further compression, because such information is not included in the bit rate information of Zhang.

Therefore, claim 60 should be allowed.

Claims 61-70 which depend onto claim 60 should also be allowed.

Response to the 35 U.S.C. 103(a) rejection of claims 4-5, 14-15, 41-42, and 52-53

Claims 4-5, 14-15, 41-42, and 52-53 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Zhang et al. in view of the admitted prior art.

Claims 4-5 depend onto claim 2, which as aforementioned should be allowed, and therefore should also be allowed.

Claims 14 and 15 are method claims containing similar limitations as method claims 4 and 5, and therefore should also be allowed.

Claims 41-42 depend onto claim 38, which as aforementioned should be allowed, and therefore should also be allowed.

Claims 52 and 53 are apparatus claims containing similar limitations as apparatus claims 41 and 42, and therefore should also be allowed.

Response to the 35 U.S.C. 103(a) rejection of claims 35, and 71-73

Claims 35 and 71 stand rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Zhang.

Claim 35 contain limitations similar to that of claim 26 which should be allowed, and therefore should also be allowed.

Claims 71 is an apparatus claim corresponding to method claim 35, and as such should also be allowed.

Claims 72 and 73 stand rejected as allegedly being unpatentable over Zhang in view of Linzer et al. (USPN 6,038,256).

Referring to claim 72, the examiner argues that Zhang teaches an apparatus for modifying a bit rate of a sequence of media signals, based on bit rate conversion information received from a distribution center, such that the bit rate of the sequence of media signals does not exceed an available bandwidth of a communication channel, the apparatus comprising: (a) a controller, coupled to a bit rate converter, for receiving bit rate conversion information and bandwidth information and for determining whether to convert the bit rate of the sequence of media signals in response to the bandwidth information and the bit rate conversion information; and (b) the bit rate converter, coupled to the controller, for receiving the sequence of media signals, and for converting the bit rate of the sequence of media signals, in response to the determination.

However, Zhang does not teach of the limitation that the apparatus modifies bit rate conversion information to reflect bit rate conversion schemes that were applied by the bit rate converter, which, argues the examiner, could be learnt from Linzer.

The applicants respectfully disagree. Following the same line of argument offered above, Zhang does not teach of receiving bit rate conversion information which teaches of results of bit rate conversion which was not yet applied to the received sequence of media signals (as it was received), and does not teach of a bit rate converter which is adapted to convert the bit rate of the sequence of media signals in a bit rate conversion scheme that is indicated in the bit rate conversion information though not yet applied to the sequence of media signals, and neither does Linzer.

As neither of the references nor a combination thereof teaches or suggests all the limitations of claim 72, a *prima facie* case of obviousness could not be establish.

Therefore, claim 72 should be allowed.

Claim 73, which depends onto claim 72, should also be allowed.

Referring to claim 73, the examiner argues that Zhang teaches that the bit rate conversion information being indicative of results of an appliance of sequence of bit rate conversion schemes on the sequence of media signals. However, the bit rate information of Zhang may be indicative of result of bit rate conversion schemes which were applied to the sequence of media signals before the receiving, and not bit rate conversion schemes which are yet to be applied to the sequence of media signals by the apparatus.

Therefore, claim 73 should be allowed.

Conclusion

The applicant believes that in view of these arguments claims 1-6, 9, 11-17, 19, 26, 29, 35, 38-45, 47-64, and 67-73 should be allowed.

Respectfully submitted,

Date: 15 January 2008, /Oren Reches/

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Reches Patents,

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